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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/704,968 11/02/00 SHIANUMA

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EXAMINER

HM12/0725

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ART UNIT

PAPER NUMBER

1625

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07/25/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

**Office Action Summary**

Application No.

09/704,968

Applicant(s)

SHIANUMA ET AL.

Examiner

Evelyn Huang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_ 6) ☐ Other: \_\_\_\_.

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1. Claims 1-10 are pending.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- a. Claims 1, 4, 7, 8, the term 'general' in 'general formula' is unclear; its deletion is recommended.
- b. Claim 7, it is unclear as to how the compound of formula I with R1 and R2 is prepared from a compound of formula III with R3 and R4. It is recommended that a consistent set of nomenclature be used.
- c. Claim 8, it is unclear as to how the compound of formula II with Ar1 and Ar2 is prepared from a compound of formula IV with Ar3 and Ar4. It is recommended that a consistent set of nomenclature be used.
- d. Claims 8, 10, it is unclear as to what applicant intends to be 'in such a way'.
- f. Claims 1, what are the hydrocarbon group? What are the substituents on the hydrocarbon group? Although examples are given, a definition is not found in the specification.
- g. Claim 4, what are the substituents on the aryl group? Although examples are given, a definition is not found in the specification.

The rejection is applicable to claims dependent on the above claims.

***Duplicate claims***

3. Applicant is advised that should claims 1, 4 be found allowable, claims 2-3, 5-6 respectively will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof

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because the use of the compound does not further limit the compound. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Sasamoto (5262526). Compound x ( Fig. 4) is encompassed by the instant claims.

6. Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Sugihara. Compounds of RN 151862-66-7, 151862-67-8, 151862-68-9, 151862-70-3 and the process of preparation thereof, are encompassed by the instant claims. 1-3, 7, 8. The compound of RN 51786-73-3 and the process of preparation thereof, are encompassed by the instant claims 4-6, 9, 10.

7. Claims 4-6, are rejected under 35 U.S.C. 102(b) as being anticipated by Dietrich- ✓  
Buchecker. Compounds of RN 107428-38-6 and 107428-37-5 are encompassed by the instant claims.

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 7, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Juda (3951833).

Juda generically discloses a 1, 10-phenanthroline compound useful for inhibiting the growth of microorganisms. (column 3). A specific example, 2, 9-dimethyl-4, 7-diphenyl-1, 10-phenanthroline is described (column 8, Table V, Example 27).

Juda's Example 27 has a methyl instead of the instant ethyl, propyl or butyl on the 1,10-phenanthroline.


Juda, however, teaches that methyl, ethyl, propyl, or butyl are optional choices within the lower alkyl of 1-4 carbon atoms (column 3, lines 39-40).

At the time of the invention, in view of Juda's teaching that all the species within the generic disclosure would be useful for inhibiting the growth of microorganisms, one of ordinary skill in the art would be motivated to prepare the alternative species within the small genus disclosed by Juda to arrive at the instant invention with the reasonable expectation of obtaining an additional biocidal compound.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Evelyn Huang whose telephone number is 703-305-7247. The examiner can normally be reached on Tuesday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jyothsna Venkat can be reached on 703-308-2439. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-4556 for regular communications and 703-308-4556 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1235.

  
Evelyn Huang  
Primary Examiner  
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July 17, 2001